12. Improvements to Roads and Drains at Thanisandra Village and surrounding areas in ward No 06 - Thanisandra, Byatarayanapura Sub Division.

KEY MAP –12. THANISANDRA VILLAGE

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Roads and Drains at Thanisandra Village and surrounding areas in ward No 06 - Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	Thanisandra Village	Sqm							
	Shekhar Gowda House backside road		1	160.00	1.20		192.00		
	Consider 20% for Damaged and missing	Slabs					-38.40		
							153.60	80.56	**12374.02**
2	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Thanisandra Village	Cum							
	Thanisandra Kateramma Temple road		2	320.00	0.45	0.20	57.60		
	DoddeGouda house beside road		2	110.00	0.45	0.20	19.80		
	TK Ramchandrappa House road		2	80.00	0.45	0.20	14.40		
	cross road 1		2	30.00	0.45	0.30	8.10		
	cross road 2		2	90.00	0.45	0.30	24.30		
	4th main road		2	250.00	0.45	0.30	67.50		
	1st Cross		2	120.00	0.45	0.30	32.40		
	New Drain								
	Shekhar Gowda House backside road		1	50.00	1.10	0.85	46.75		
	Culverts		4	6.50	2.00	1.05	54.60		
							325.45	186.92	**60833.11**
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	for damaged drains		2	40.00	1.35	--	108.00		
							108.00	665.68	**71893.44**
4	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 10cms thick (P.No.25, I.No.5.31.2 of PW, P&IWTD SR 2016-17)								
	For BS Slab Cover	Sqm							
	Consider 20% for Damaged and missing	Slabs					38.40		
							38.40	825.74	**31708.42**
5	KSRB 5-9 : Providing chamfering edges to stone slab 2.5 cms. wide as per specifications, (only chamfered length shall be recorded) KBS 5.1.13 (P.No.24, I.No.5.22 of PW,P&IWTD SR 2016-17)								
	For BS Slab Cover	m							
	Shekhar Gowda House backside road		1	267.00	3.00	--	801.00		
							801.00	37.10	**29717.10**
6	Providing One line dressing to granite stone slab/ granite stone masonry as per speciication (P.No.23, I.No.5.17 of PW,P&IWTD SR 2016-17)								
	Shekhar Gowda House backside road	Sqm	1.00	160.00	0.90	--	144.00		
							144.00	577.70	**83188.80**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
7	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	DoddeGouda house beside road		1	110.00	3.50	0.15	57.75		
	cross road 1		1	30.00	4.00	0.15	18.00		
	cross road 2		1	90.00	4.00	0.15	54.00		
	Shekhar Gowda House backside road		1	50.00	1.10	0.10	5.50		
	Culverts		4	6.50	2.00	0.15	7.80		
							143.05	5348.76	**765140.12**
8	Providing laying plain/ reinforced cement concrete M20 Grade for Box Drain walls of thickness 10cm to 20cm including centering shuttering for work etc. complete as per approved drawing and design MORTH specification No. 1500, 1700, 2200. (P.No.265, I.No.37.59.2 of PW, P&IWTD SR 2016-17)								
	Drain	Cum							
	Bottom Raft								
	Shekhar Gowda House backside road		1	50.00	0.90	0.15	6.75		
	Walls								
	Shekhar Gowda House backside road		2	50.00	0.15	0.60	9.00		
							15.75	11032.48	**173761.56**
9	KSRB - 4.9.2: Providing TMT steel reinforcement Fe500 for R.C.C work including straightening, cutting, bending, hooking, paicing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining memebrs wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3. (P.No.17, I.No.4.46.2 of PW, P&IWTD SR 2016-17)								
	Consider 50Kgs/cum for only RCC Drain Qty	Tonne		158.80	0.050	--	7.94		
							7.94	73691.20	**585108.13**
10	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	Culverts	Cum							
			8	6.50	0.60	0.90	28.08		
							28.08	4438.22	**124625.22**
11	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	Culverts	Sqm							
			8	6.50	--	0.90	46.80		
							46.80	102.82	**4811.98**
12	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Coping	Cum							
	Culverts		8	6.50	0.60	0.10	3.12		
							3.12	5767.46	17994.48
13	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Culverts		4	6.50	1.80	--	46.80		
							46.80	5317.00	248835.60
14	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	DoddeGouda house beside road		1	110.00	3.50	0.20	77.00		
	Kateramma Temple Road		1	150.00	5.50	0.25	206.25		
	Bad Reaches		6	2.00	2.20	0.25	6.60		
			9	1.20	1.50	0.25	4.05		
			2	25.00	4.50	0.25	56.25		
							350.15	148.76	52088.31
15	Cement concrete pavement.Construction of un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base with OPC cement or any other type as per clause 1051.2.2 design mix M20/M30 , with 25mm and down size graded granite metal coarse aggregates and fine aggregtes , with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 , mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specifications. - M30 (at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum) ((P.No.177, I.No.22.6.1 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	DoddeGouda house beside road		1	110.00	3.50	0.10	38.50		
	cross road 1		1	30.00	4.00	0.10	12.00		
	cross road 2		1	90.00	4.00	0.10	36.00		
							86.50	6217.96	537853.54
16	Vaccum de-watering with vaccum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift.(P.No.177, I.No.22.7 of PW, P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	DoddeGouda house beside road		1	110.00	3.50	--	385.00		
	cross road 1		1	30.00	4.00	--	120.00		
	cross road 2		1	90.00	4.00	--	360.00		
							865.00	95.40	82521.00

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
17	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Kateramma Temple Road		1	150.00	5.50	0.23	189.75		
	Bad Reaches		6	2.00	2.20	0.23	6.07		
			10	1.20	1.50	0.23	4.14		
			2	26.00	4.50	0.23	53.82		
							253.78	1768.08	**448706.88**
	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg\sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Kateramma Temple Road		1	150.00	5.50	--	825.00		
	Bad Reaches		6	2.00	2.20	--	26.40		
			10	1.20	1.50	--	18.00		
			2	26.00	4.50	--	234.00		
							1103.40	29.68	**32748.91**
18	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Thanisandra Kateramma Temple road		1	320.00	4.80	--	1536.00		
	TK Ramchandrappa House road		1	80.00	6.00	--	480.00		
	4th main road		1	250.00	6.00	--	1500.00		
	1st Cross		1	120.00	5.50	--	660.00		
							4176.00		
	Deduct prime coat						-1103.40		
							3072.60	3.18	**9770.87**
19	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	Thanisandra Kateramma Temple road		1	320.00	4.80	--	1536.00		
	TK Ramchandrappa House road		1	80.00	6.00	--	480.00		
	4th main road		1	250.00	6.00	--	1500.00		
	1st Cross		1	120.00	5.50	--	660.00		
							4176.00	12.72	**53118.72**
20	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	Thanisandra Kateramma Temple road		1	320.00	4.80	0.04	61.44		
	TK Ramchandrappa House road		1	80.00	6.00	0.04	19.20		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	4th main road		1	250.00	6.00	0.04	60.00		
	1st Cross		1	120.00	5.50	0.04	26.40		
							167.04	8013.60	1338591.74
21	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge Line	Sqm	2	770.00	0.10	--	154.00		
							154.00	542.72	83578.88
							Total Construction Cost		4848970.817
22	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	1884.21	27.00	50874.00
	Waste = 167.04 X 141 X 8 / 100 = 1884.21								
23							Cost towards Preparation of DPR LS		48490.00
24							Cost towards PMC / Third Party inspection LS		48490.00
								Sub Total	4996824.82
25							Miscellaneous and rounding off		3175.18
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

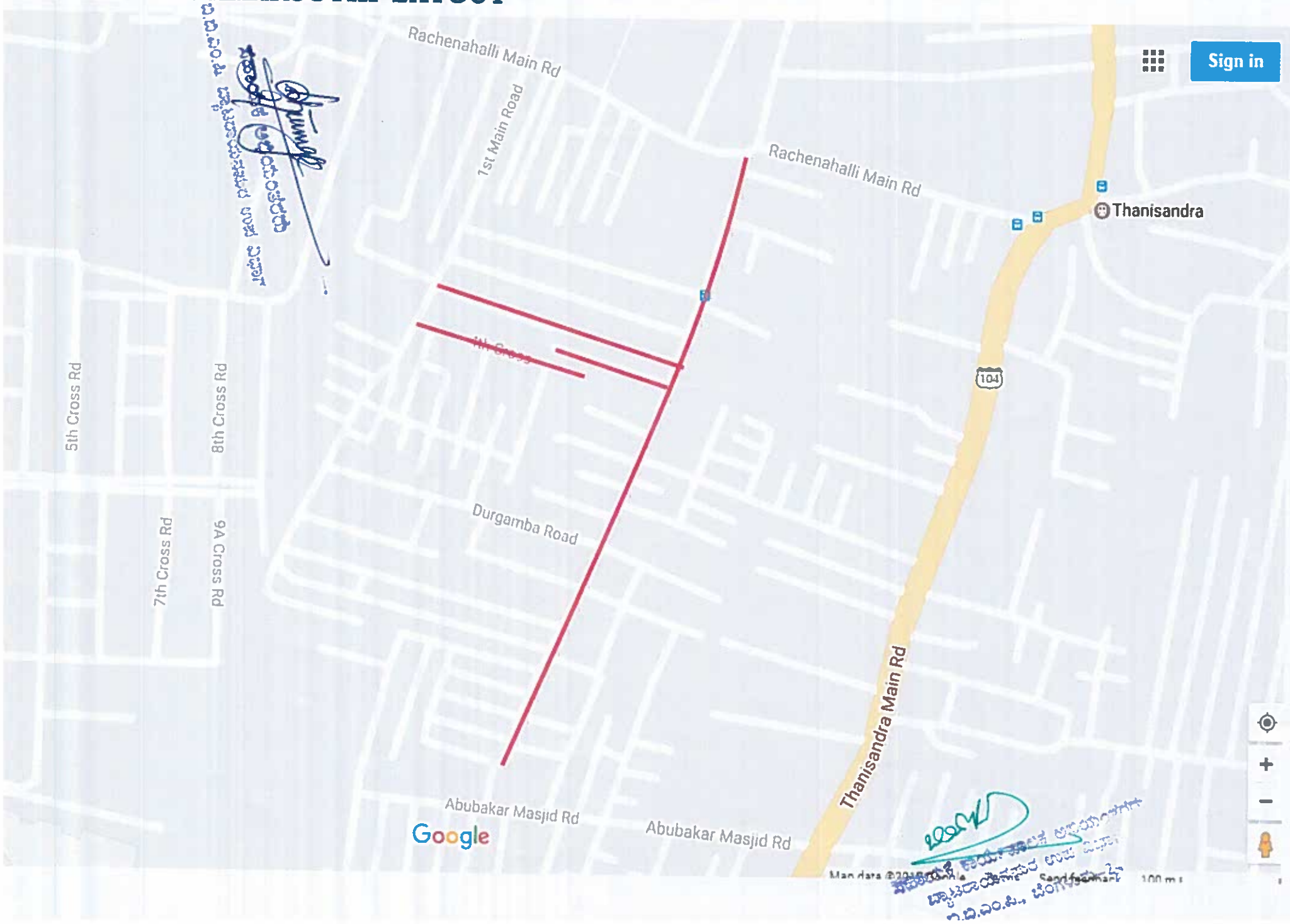
Technical Sanction
Accorded For Rs.50.00 lakh only
Head of A/C P-3089
CER NO :.....98..... Dt:.. 22.07.17

TA i

GE (YNK)

13. Improvements to Roads, and Drains at Rachenahalli Village, Anjamnadri layout, Mestripalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP –13. AMARJOTHI LAYOUT



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Roads, and Drains at Rachenahalli Village, Anjamnadri layout, Mestripalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Amarajyothi Layout								
	Amarajyothi Layout Main Road		1	630.00	0.45	0.20	56.70		
	Anjanadri layout								
	3rd Cross		1	350.00	0.45	0.20	31.50		
	4th Cross		1	130.00	0.45	0.20	11.70		
	Cross Road		1	180.00	0.45	0.20	16.20		
	New Drain								
	Amarajyothi Layout Main Road		1	625.00	0.50	0.50	156.25		
							272.35	186.92	**50907.66**
2	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	Amarajyothi Layout Main Road		1	625.00	1.35	--	843.75		
							843.75	665.68	**561667.50**
3	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Amarajyothi Layout								
	Amarajyothi Layout Main Road(Widening Portion)		2	630.00	1.00	0.25	315.00		
	Anjanadri layout								
	3rd Cross		1	345.00	5.00	0.20	345.00		
	4th Cross		1	130.00	4.00	0.20	104.00		
	Cross Road		1	180.00	5.00	0.20	180.00		
	Badreaches		6	2.00	1.50	0.25	4.50		
			5	1.00	1.20	0.25	1.50		
							950.00	148.76	**141322.00**
4	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road portion	Cum							
	Amarajyothi Layout								
	Amarajyothi Layout Main Road(Widening Portion)		1	630.00	1.00	0.23	144.90		
	Anjanadri layout								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	3rd Cross		1	345.00	5.00	0.23	396.75		
	4th Cross		1	130.00	4.00	0.23	119.60		
	Cross Road		1	180.00	5.00	0.23	207.00		
	Badreaches		6	2.00	1.50	0.23	4.14		
			5	1.00	1.20	0.23	1.38		
							873.77	1768.08	**1544895.26**
5	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road portion	Sqm							
	Amarajyothi Layout								
	Amarajyothi Layout Main Road(Widening Portion		1	630.00	1.00	--	630.00		
	Anjanadri layout								
	3rd Cross		1	345.00	5.00	--	1725.00		
	4th Cross		1	130.00	4.00	--	520.00		
	Cross Road		1	180.00	5.00	--	900.00		
	Badreaches		6	2.00	1.50	--	18.00		
			5	1.00	1.20	--	6.00		
							3799.00	29.68	**112754.32**
6	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Amarajyothi Layout								
	Amarajyothi Layout Main Road		1	630.00	6.00	--	3780.00		
	Anjanadri layout								
	3rd Cross		1	350.00	4.50	--	1575.00		
	4th Cross		1	130.00	4.00	--	520.00		
	Cross Road		1	180.00	5.00	--	900.00		
							6775.00		
	Deduct prime coat						-3799.00		
							2976.00	3.18	**9463.68**
7	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	Amarajyothi Layout								
	Amarajyothi Layout Main Road		1	630.00	6.00	--	3780.00		
	Anjanadri layout								
	3rd Cross		1	350.00	4.50	--	1575.00		
	4th Cross		1	130.00	4.00	--	520.00		
	Cross Road		1	180.00	5.00	--	900.00		
							6775.00	12.72	**86178.00**
8	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	For Laying BC	Cum							
	Amarajyothi Layout								
	Amarajyothi Layout Main Road		1	630.00	6.00	0.04	151.20		
	Anjanadri layout								
	3rd Cross		1	350.00	4.50	0.04	63.00		
	4th Cross		1	130.00	4.00	0.04	20.80		
	Cross Road		1	180.00	5.00	0.04	36.00		
							271.00	8013.60	2171685.60
9	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No 24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	1290.00	0.10	--	258.00		
							258.00	542.72	140021.76
							Total Construction Cost		4818895.780
10	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	3056.88	27.00	82536.00
	Waste = 271 X 141 X 8 / 100 = 3056.88								
11					Cost towards Preparation of DPR LS				48189.00
12					Cost towards PMC / Third Party inspection LS				48189.00
								Sub Total	4997809.78
13					Miscellaneous and rounding off				2190.22
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For Rs.50.00 lakh
Head of A/C P-3089
CER NO :...99..... **Dt:**..22-07-17

TA | CE (YNK)

14. Improvements to Roads, and Drains at R.K.Hegdenagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP – 14. R K HEGADE NAGARA (POLICE TRAINING CENTER)

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Roads, and Drains at R.K. hegdenagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Police Training Centre SWD connecting Drains		1	778.00	2.00	1.05	1633.80		
							1633.80	186.92	**305389.90**
2	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	Police Training Centre SWD connecting Drains		1	778.00	2.00	0.15	233.40		
							233.40	5348.76	**1248400.58**
3	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Cum							
	Police Training Centre SWD connecting Drains		2.00	778.00	0.45	0.90	630.18		
							630.18	4438.22	**2796877.48**
4	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Sqm							
	Police Training Centre SWD connecting Drains		2.00	778.00	–	0.90	1400.40		
							1400.40	102.82	**143989.13**
5	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	Coping	Cum							
	Police Training Centre SWD connecting Drains		2	778.00	0.450	0.100	70.02		
							70.02	5767.46	**403837.55**

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
							Total Construction Cost		4898494.639
6							Cost towards Preparation of DPR LS		48985.00
7							Cost towards PMC / Third Party inspection LS		48985.00
								Sub Total	4996464.64
8							Miscellaneous and rounding off		3535.36
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

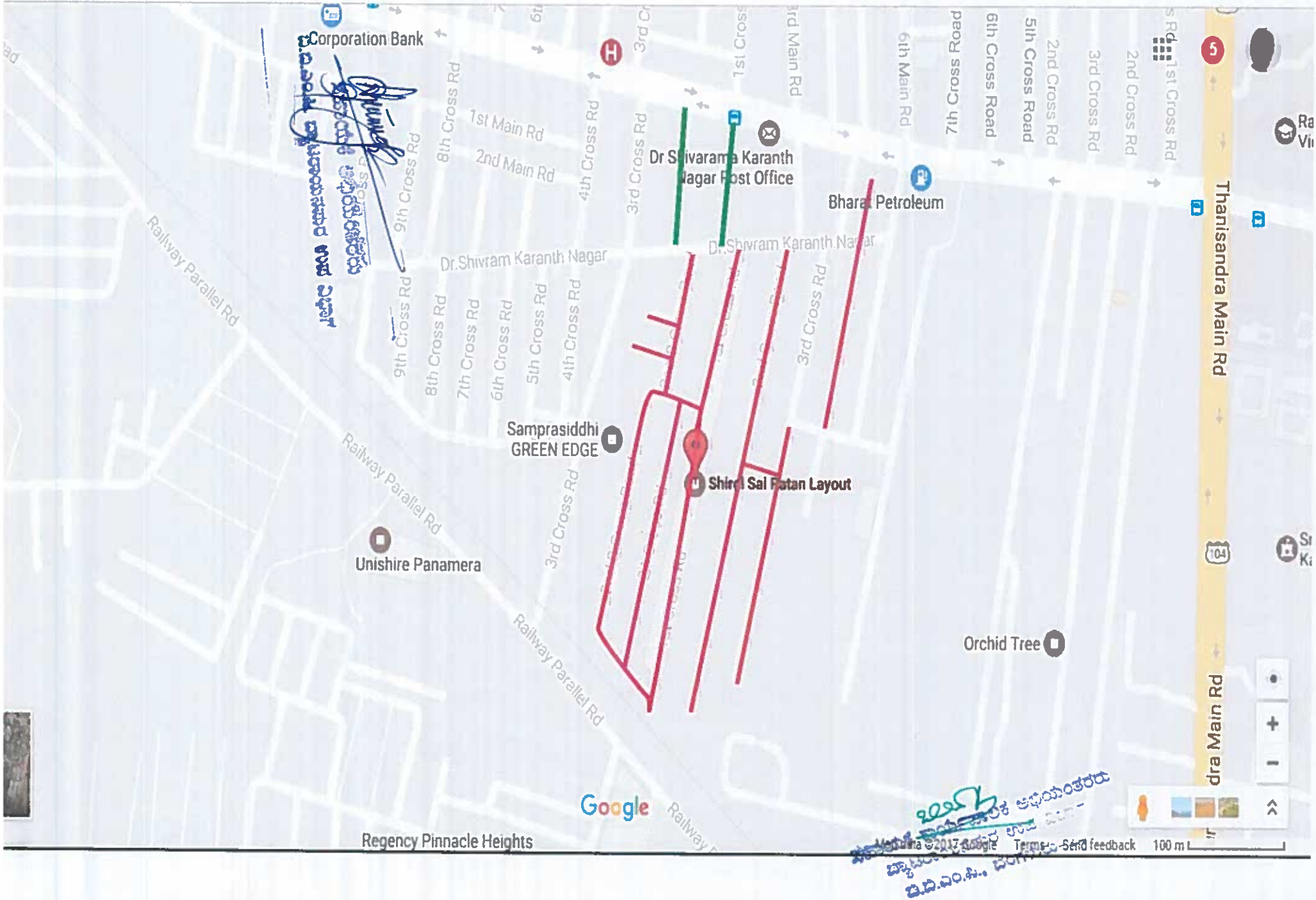
Executive Engineer

Technical Sanction
Accorded For Rs. 50.00 lakh only
Head of A/C P-3089
CER NO :....100..... **Dt:** 22.07.17

TA CE (YNK)

15. Improvements to Balance Roads, and Drains at BDS Layout, Shirdi Sai Rathanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP – 15. SHIRADI SAI RATHAN AGARA, BDS LAYOUT



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Balance Roads, and Drains at BDS Layout, Shirdi Sai Rathanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	BDS Layout								
	2nd Cross		2	160.00	0.45	0.30	43.20		
	3rd Cross		2	250.00	0.45	0.30	67.50		
	Cross Road in 3rd Cross		2	35.00	0.45	0.30	9.45		
	4th Cross		2	300.00	0.45	0.30	81.00		
	Shirdi Sai Rathan Layout								
	1st Cross(Shivaramakaranth Rd to 1st Main)		2	145.00	0.45	0.30	39.15		
	2nd Cross(Shivaramakaranth Rd to 1st Main)		2	125.00	0.45	0.30	33.75		
	Cross Road 1		1	35.00	0.45	0.30	4.73		
	Cross Road 2		2	40.00	0.45	0.30	10.80		
	Cross Road 3		2	45.00	0.45	0.30	12.15		
	3rd Cross(1st Main to 2nd Main)		2	250.00	0.45	0.30	67.50		
	2nd Cross(1st Main to 2nd Main)		2	225.00	0.45	0.30	60.75		
	1st Cross(1st Main to 2nd Main)		2	205.00	0.45	0.30	55.35		
	1st Main		2	100.00	0.45	0.30	27.00		
	Cross Road		2	200.00	0.45	0.30	54.00		
	MCEHCS Layout								
	1st Cross		2	105.00	0.45	0.30	28.35		
	2nd Cross		2	120.00	0.45	0.30	32.40		
							627.08	186.92	**117212.86**
2	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Badreaches								
			8	20.00	4.50	0.25	180.00		
			15	2.00	2.50	0.25	18.75		
			19	1.20	1.50	0.25	8.55		
			23	0.50	4.50	0.25	12.94		
							220.24	148.76	**32762.53**
3	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road portion	Cum							
	Badreaches								
			8	20.00	4.50	0.23	165.60		
			15	2.00	2.50	0.23	17.25		
			19	1.20	1.50	0.23	7.87		
			23	0.50	4.50	0.23	11.90		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
							202.62	1768.08	**358245.72**
4	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road portion	Sqm							
	Badreaches								
			8	20.00	4.50	--	720.00		
			15	2.00	2.50	--	75.00		
			19	1.20	1.50	--	34.20		
			23	0.50	4.50	--	51.75		
							880.95	29.68	**26146.60**
5	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	BDS Layout								
	2nd Cross		1	160.00	5.00	--	800.00		
	3rd Cross		1	250.00	5.00	--	1250.00		
	Cross Road in 3rd Cross		1	35.00	4.50	--	157.50		
	4th Cross		1	300.00	4.80	--	1440.00		
	Shirdi Sai Rathan Layout								
	1st Cross(Shivaramakaranth Rd to 1st Main)		1	145.00	4.50	--	652.50		
	2nd Cross(Shivaramakaranth Rd to 1st Main)		1	125.00	5.00	--	625.00		
	Cross Road 1		1	35.00	4.00	--	140.00		
	Cross Road 2		1	40.00	4.00	--	160.00		
	Cross Road 3		1	45.00	4.50	--	202.50		
	3rd Cross(1st Main to 2nd Main)		1	250.00	5.00	--	1250.00		
	2nd Cross(1st Main to 2nd Main)		1	225.00	5.00	--	1125.00		
	1st Cross(1st Main to 2nd Main)		1	205.00	5.00	--	1025.00		
	1st Main		1	100.00	5.00	--	500.00		
	Cross Road		1	200.00	5.00	--	1000.00		
	MCEHCS Layout								
	1st Cross		1	105.00	5.00	--	525.00		
	2nd Cross		1	120.00	5.00	--	600.00		
	Railway Parallel Road		1	75.00	4.50	--	337.50		
							11790.00		
	Deduct prime coat						-880.95		
							10909.05	3.18	**34690.78**
6	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	BDS Layout								
	2nd Cross		1	160.00	5.00	--	800.00		
	3rd Cross		1	250.00	5.00	--	1250.00		
	Cross Road in 3rd Cross		1	35.00	4.50	--	157.50		
	4th Cross		1	300.00	4.80	--	1440.00		
	Shirdi Sai Rathan Layout								
	1st Cross(Shivaramakaranth Rd to 1st Main)		1	145.00	4.50	--	652.50		
	2nd Cross(Shivaramakaranth Rd to 1st Main)		1	125.00	5.00	--	625.00		
	Cross Road 1		1	35.00	4.00	--	140.00		
	Cross Road 2		1	40.00	4.00	--	160.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Cross Road 3		1	45.00	4.50	--	202.50		
	3rd Cross(1st Main to 2nd Main)		1	250.00	5.00	--	1250.00		
	2nd Cross(1st Main to 2nd Main)		1	225.00	5.00	--	1125.00		
	1st Cross(1st Main to 2nd Main)		1	205.00	5.00	--	1025.00		
	1st Main		1	100.00	5.00	--	500.00		
	Cross Road		1	200.00	5.00	--	1000.00		
	MCEHCS Layout								
	1st Cross		1	105.00	5.00	--	525.00		
	2nd Cross		1	120.00	5.00	--	600.00		
	Railway Parallel Road		1	75.00	4.50	--	337.50		
							11790.00	12.72	**149968.80**
7	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	BDS Layout								
	2nd Cross		1	160.00	5.00	0.04	32.00		
	3rd Cross		1	250.00	5.00	0.04	50.00		
	Cross Road in 3rd Cross		1	35.00	4.50	0.04	6.30		
	4th Cross		1	300.00	4.80	0.04	57.60		
	Shirdi Sai Rathan Layout								
	1st Cross(Shivaramakaranth Rd to 1st Main)		1	145.00	4.50	0.04	26.10		
	2nd Cross(Shivaramakaranth Rd to 1st Main)		1	125.00	5.00	0.04	25.00		
	Cross Road 1		1	35.00	4.00	0.04	5.60		
	Cross Road 2		1	40.00	4.00	0.04	6.40		
	Cross Road 3		1	45.00	4.50	0.04	8.10		
	3rd Cross(1st Main to 2nd Main)		1	250.00	5.00	0.04	50.00		
	2nd Cross(1st Main to 2nd Main)		1	225.00	5.00	0.04	45.00		
	1st Cross(1st Main to 2nd Main)		1	205.00	5.00	0.04	41.00		
	1st Main		1	100.00	5.00	0.04	20.00		
	Cross Road		1	200.00	5.00	0.04	40.00		
	MCEHCS Layout								
	1st Cross		1	105.00	5.00	0.04	21.00		
	2nd Cross		1	120.00	5.00	0.04	24.00		
	Railway Parallel Road		1	75.00	4.50	0.04	13.50		
							471.60	8013.60	**3779213.76**
8	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	2415.00	0.10	--	483.00		
							483.00	542.72	**262133.76**
							Total Construction Cost		**4760374.810**
9	Add cost of **Waste Plastic** @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	**5319.65**	27.00	**143630.00**
	Waste = 471.60 X 141 X 8 / 100 = 5319.65								
10							**Cost towards Preparation of DPR LS**		**47604.00**
11							**Cost towards PMC / Third Party inspection LS**		**47604.00**
								Sub Total	**4999212.81**
12							**Miscellaneous and rounding off**		**787.19**

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
								Total	5000000.00
Certificate.									
1	The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.								
2	The provisions made in the estimate are necessary and essential.								
3	The workspot was inspected and work is found to be necessary.								
4	The area comes within the Bruhat Bangalore Mahanagara Palike limits.								

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

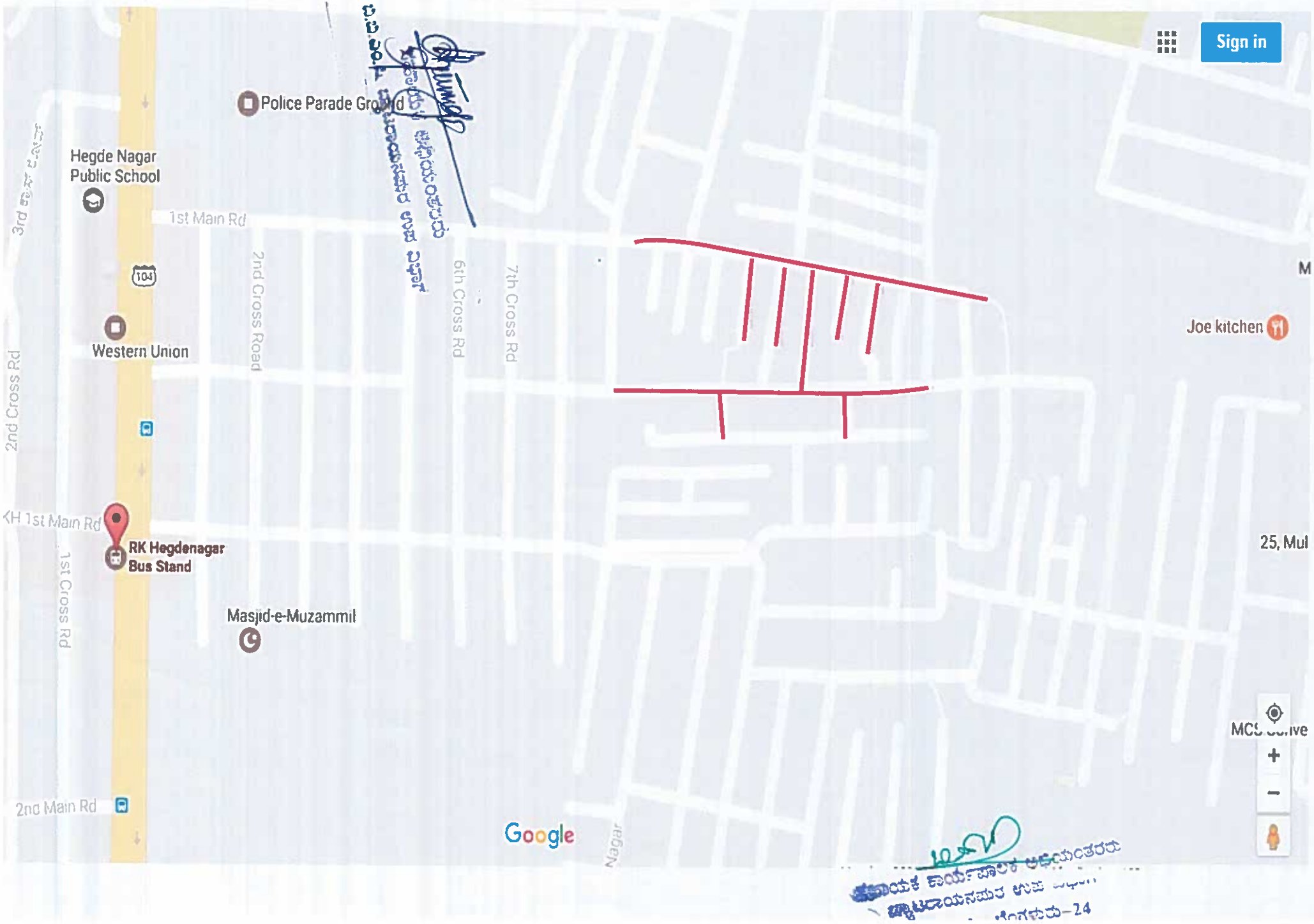
Executive Engineer

Technical Sanction
Accorded For Rs. 50.00 lakh
Head of A/C P-3089
CER NO 101 **Dt:** 22.07.17

TA CE (YNK)

16. Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP –16. SHABHARINAGAR (NEW SANTHINAGAR)



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Ex Army Layout	Cum							
	Ex Army Layout Main Road		2	260.00	0.45	0.30	70.20		
	LHS								
	Cross Road 1		2	25.00	0.45	0.30	6.75		
	Cross Road 2		1	25.00	0.45	0.30	3.38		
	RHS								
	Cross Road 1		2	75.00	0.45	0.30	20.25		
	Cross Road 2		2	23.00	0.45	0.30	6.21		
	Cross Road 3		2	25.00	0.45	0.30	6.75		
	Cross Road 4		2	25.00	0.45	0.30	6.75		
	Cross Road 5		2	25.00	0.45	0.30	6.75		
	New Shanthi Nagar								
	New Shanthi Nagar Main Road		2	315.00	0.45	0.20	56.70		
	7th Cross		1	55.00	0.45	0.20	4.95		
	5th Cross		1	60.00	0.45	0.20	5.40		
	4th Cross		2	60.00	0.45	0.20	10.80		
	New Drain								
	Ex Army Layout								
	LHS								
	Cross Road 2		1	25.00	0.60	0.50	7.50		
	New Shanthi Nagar								
	8th Cross		2	50.00	0.60	0.50	30.00		
	7th Cross		1	55.00	0.60	0.50	16.50		
	5th Cross		1	60.00	0.60	0.50	18.00		
							276.89	186.92	**51755.34**
2	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For New BS Slab Drain	Sqm							
	Ex Army Layout								
	Cross Road 2		1	25.00	1.35	--	33.75		
	New Shanthi Nagar								
	8th Cross		2	50.00	1.35	--	135.00		
	7th Cross		1	55.00	1.35	--	74.25		
	5th Cross		1	60.00	1.35	--	81.00		
							324.00	665.68	**215680.32**
3	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Ex Army Layout								
	Ex Army Layout Main Road		1	260.00	5.50	0.25	357.50		
	LHS								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Cross Road 1		1	25.00	5.50	0.25	34.38		
	Cross Road 2		1	25.00	5.50	0.25	34.38		
	RHS								
	Cross Road 1		1	75.00	4.80	0.25	90.00		
	Cross Road 2		1	23.00	5.50	0.25	31.63		
	Cross Road 3		1	25.00	4.50	0.25	28.13		
	Cross Road 4		1	25.00	4.00	0.25	25.00		
	Cross Road 5		1	25.00	4.50	0.25	28.13		
	New Shanthi Nagar								
	New Shanthi Nagar Main Road		1	315.00	6.00	0.25	472.50		
	8th Cross		1	50.00	5.50	0.25	68.75		
	7th Cross		1	55.00	5.50	0.25	75.63		
	5th Cross		1	60.00	4.50	0.25	67.50		
	4th Cross		1	60.00	4.50	0.25	67.50		
							1381.00	148.76	**205437.56**
4	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road portion	Cum							
	Ex Army Layout								
	Ex Army Layout Main Road		1	260.00	5.50	0.23	328.90		
	LHS								
	Cross Road 1		1	25.00	5.50	0.23	31.63		
	Cross Road 2		1	25.00	5.50	0.23	31.63		
	RHS								
	Cross Road 1		1	75.00	4.80	0.23	82.80		
	Cross Road 2		1	23.00	5.50	0.23	29.10		
	Cross Road 3		1	25.00	4.50	0.23	25.88		
	Cross Road 4		1	25.00	4.00	0.23	23.00		
	Cross Road 5		1	25.00	4.50	0.23	25.88		
	New Shanthi Nagar								
	New Shanthi Nagar Main Road		1	315.00	6.00	0.23	434.70		
	8th Cross		1	50.00	5.50	0.23	63.25		
	7th Cross		1	55.00	5.50	0.23	69.58		
	5th Cross		1	60.00	4.50	0.23	62.10		
	4th Cross		1	60.00	4.50	0.23	62.10		
							1270.52	1768.08	**2246381.00**
	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road portion	Sqm							
	Ex Army Layout								
	Ex Army Layout Main Road		1	260.00	5.50	--	1430.00		
	LHS								
	Cross Road 1		1	25.00	5.50	--	137.50		
	Cross Road 2		1	25.00	5.50	--	137.50		
	RHS								
	Cross Road 1		1	75.00	4.80	--	360.00		
	Cross Road 2		1	23.00	5.50	--	126.50		
	Cross Road 3		1	25.00	4.50	--	112.50		
	Cross Road 4		1	25.00	4.00	--	100.00		
	Cross Road 5		1	25.00	4.50	--	112.50		
	New Shanthi Nagar								
	New Shanthi Nagar Main Road		1	315.00	6.00	--	1890.00		
	8th Cross		1	50.00	5.50	--	275.00		
	7th Cross		1	55.00	5.50	--	302.50		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	5th Cross		1	60.00	4.50	--	270.00		
	4th Cross		1	60.00	4.50	--	270.00		
							5524.00	29.68	163952.32
5	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	Ex Army Layout								
	Ex Army Layout Main Road		1	260.00	5.50	--	1430.00		
	LHS								
	Cross Road 1		1	25.00	5.50	--	137.50		
	Cross Road 2		1	25.00	5.50	--	137.50		
	RHS								
	Cross Road 1		1	75.00	4.80	--	360.00		
	Cross Road 2		1	23.00	5.50	--	126.50		
	Cross Road 3		1	25.00	4.50	--	112.50		
	Cross Road 4		1	25.00	4.00	--	100.00		
	Cross Road 5		1	25.00	4.50	--	112.50		
	New Shanthi Nagar								
	New Shanthi Nagar Main Road		1	315.00	6.00	--	1890.00		
	8th Cross		1	50.00	5.50	--	275.00		
	7th Cross		1	55.00	5.50	--	302.50		
	5th Cross		1	60.00	4.50	--	270.00		
	4th Cross		1	60.00	4.50	--	270.00		
							5524.00	12.72	70265.28
6	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	Ex Army Layout								
	Ex Army Layout Main Road		1	260.00	5.50	0.04	57.20		
	LHS								
	Cross Road 1		1	25.00	5.50	0.04	5.50		
	Cross Road 2		1	25.00	5.50	0.04	5.50		
	RHS								
	Cross Road 1		1	75.00	4.80	0.04	14.40		
	Cross Road 2		1	23.00	5.50	0.04	5.06		
	Cross Road 3		1	25.00	4.50	0.04	4.50		
	Cross Road 4		1	25.00	4.00	0.04	4.00		
	Cross Road 5		1	25.00	4.50	0.04	4.50		
	New Shanthi Nagar								
	New Shanthi Nagar Main Road		1	315.00	6.00	0.04	75.60		
	8th Cross		1	50.00	5.50	0.04	11.00		
	7th Cross		1	55.00	5.50	0.04	12.10		
	5th Cross		1	60.00	4.50	0.04	10.80		
	4th Cross		1	60.00	4.50	0.04	10.80		
							220.96	8013.60	1770685.06

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
7	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge Line	Sqm	2	1023.00	0.10	--	204.60		
							204.60	542.72	111040.51
							Total Construction Cost		4835197.390
8	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	2492.43	27.00	67296.00
	Waste = 220.96 X 141 X 8 / 100 = 2492.43								
9							Cost towards Preparation of DPR LS		48352.00
10							Cost towards PMC / Third Party Inspection LS		48352.00
								Sub Total	4999197.39
11							Miscellaneous and rounding off		802.61
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For Rs. 50.00 lakh
Head of A/C P-3089
CER NO : 182 Dt: 22.07.17

TA GE (YNK).

17. Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP –17. SARAIPALYA, THANISANDRA

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Saraipalya	Cum							
	Saraipalya Main Road		2	395.00	0.45	0.30	106.65		
	New Drain								
	Lead off Drain to Datta Layout		1	155.00	1.40	1.05	227.85		
	Main Road		1	70.00	1.40	1.05	102.90		
			1	120.00	1.40	1.05	176.40		
	Culverts		2	6.00	2.00	1.05	25.20		
							639.00	186.92	**119441.88**
2	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	Saraipalya								
	Lead off Drain to Datta Layout		1	155.00	1.40	0.10	21.70		
	Main Road		1	70.00	1.40	0.10	9.80		
			1	120.00	1.40	0.10	16.80		
	Culverts		2	6.00	2.00	0.15	3.60		
	For Road		1	30.00	1.75	0.15	7.88		
	Cross Road 1		1	25.00	2.20	0.15	8.25		
	Cross Road 2		1	30.00	2.50	0.15	11.25		
	Cross Road 3		1	25.00	2.00	0.15	7.50		
	Cross Road 4		1	30.00	2.20	0.15	9.90		
							96.68	5348.76	**517091.37**
3	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Cum							
	Culverts		4.00	6.00	0.60	0.90	12.96		
							12.96	4438.22	**57519.33**
4	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Sqm							
	Culverts		4.00	6.00	–	0.90	21.60		
							21.60	102.82	**2220.91**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
5	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	Coping	Cum							
	Culverts		4	6.00	0.600	0.100	1.44		
							1.44	5767.46	**8305.14**
6	Providing and fixing **RCC Precast cover slab of 250mm thick** for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Culverts		2	6.00	1.80	--	21.60		
	Damaged Slabs		1	10.00	1.80	--	18.00		
							39.60	5317.00	**210553.20**
7	KSRB 4-6.4 : Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth cills and string courses cost of all materials, labour complete as per specifications. Specification No. KBS 4.6.2 (P.No.18, I.No.4.31 of PW, P&IWTD SR 2016-17)								
	Main Road	Cum							
	Covering Slab		1	70.00	1.20		84.00		
							84.00	310.58	**26088.72**
8	Providing and laying cement concrete using 20mm and downsize granite coarse aggregates and fine aggregates of ready mixed concrete (RMC) for RCC works laid in 15cms thick layers and well compacted vibrating, curing, finishing with necessary cement mortar, with all lead and lifts etc., complete (exclusive of cpost of steel and fabricaton charges) Ready Mixed Cement Concrete M 20 for Raft foundation, Column, Footing, main and secondary beams. (P.No.18, I.No.4.48 of PW, P&IWTD SR 2016-17)								
	Saraipalya	Cum							
	Covering Slab		1	70.00	1.20	0.20	16.80		
							16.80	6231.74	**104693.23**
9	Providing laying plain/ reinforced cement concrete M20 Grade for Box Drain walls of thickness 10cm to 20cm including centering shuttering for work etc. complete as per approved drawing and design MORTH specification No. 1500, 1700, 2200. (P.No.265, I.No.37.59.2 of PW, P&IWTD SR 2016-17)								
	Drain	Cum							
	Saraipalya								
	Bottom Raft								
	Lead off Drain to Datta Layout		1	155.00	1.20	0.15	27.90		
	Main Road		1	70.00	1.20	0.15	12.60		
			1	120.00	1.20	0.15	21.60		
	Walls								
	Lead off Drain to Datta Layout		2	155.00	0.15	0.60	27.90		
	Main Road		2	70.00	0.15	0.60	12.60		
			2	120.00	0.15	0.60	21.60		
							124.20	11032.48	**1370234.02**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
10	KSRB - 4.9.2: Providing TMT steel reinforcement Fe500 for R.C.C work including straightening, cutting, bending, hooking, palcing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining memebrs wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3. (P.No.17, I.No.4.46.2 of PW, P&IWTD SR 2016-17)								
	Consider 50Kgs/cum for only RCC Drain Qty	Tonne		141.00	0.050	--	7.05		
							7.05	73691.20	**519522.96**
11	Providing and fixing RCC Precast cover slab of 100mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Lead off Drain to Datta Layout		1	155.00	1.20		186.00		
	Openings		2	5.00	1.20		12.00		
			1	120.00	1.20		144.00		
							342.00	1817.00	**621414.00**
13	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Saraipalya								
	Main Road		1	30.00	1.75	0.30	15.75		
	Cross Road 1		1	25.00	2.20	0.15	8.25		
	Cross Road 2		1	30.00	2.50	0.15	11.25		
	Cross Road 3		1	25.00	2.00	0.15	7.50		
	Cross Road 4		1	30.00	2.20	0.15	9.90		
	Bajane Road		1	80.00	2.70	0.25	54.00		
	Bad Reaches		6	2.00	1.80	0.25	5.40		
			8	1.00	1.20	0.25	2.40		
							114.45	148.76	**17025.58**
14	Cement concrete pavement.Construction of un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base with OPC cement or any other type as per clause 1051.2.2 design mix M20/M30 , with 25mm and down size graded granite metal coarse aggregates and fine aggregtes , with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 , mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specifications. - M30 (at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum) ((P.No.177, I.No.22.6.1 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	For Road		1	30.00	1.75	0.10	5.25		
	Cross Road 1		1	25.00	2.20	0.10	5.50		
	Cross Road 2		1	30.00	2.50	0.10	7.50		
	Cross Road 3		1	25.00	2.00	0.10	5.00		
	Cross Road 4		1	30.00	2.20	0.10	6.60		
							29.85	6217.96	**185606.11**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
15	Vaccum de-watering with vaccum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift.(P.No.177, I.No.22.7 of PW, P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	For Road		1	30.00	1.75	--	52.50		
	Cross Road 1		1	25.00	2.20	--	55.00		
	Cross Road 2		1	30.00	2.50	--	75.00		
	Cross Road 3		1	25.00	2.00	--	50.00		
	Cross Road 4		1	30.00	2.20	--	66.00		
							298.50	95.40	28476.90
16	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	For Road	Cum							
	Bajane Road		1	80.00	2.70	0.23	49.68		
	Bad Reaches		6	2.00	1.80	0.23	4.97		
			8	1.00	1.20	0.23	2.21		
							56.86	1768.08	100525.96
17	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	For Road	Sqm							
	Bajane Road		1	80.00	2.70	--	216.00		
	Bad Reaches		6	2.00	1.80	--	21.60		
			8	1.00	1.20	--	9.60		
							247.20	29.68	7336.90
18	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Bajane Road		1	80.00	5.50	--	440.00		
	Saraipalya Main Road		1	395.00	5.80	--	2291.00		
							2731.00		
	Deduct prime coat						-247.20		
							2483.80	3.18	7898.48
19	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	Road Portion								
	Bajane Road		1	80.00	5.50	--	440.00		
	Saraipalya Main Road		1	395.00	5.80	--	2291.00		
							2731.00	12.72	34738.32

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
20	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	Road Portion								
	Bajane Road		1	80.00	5.50	0.04	17.60		
	Saraipalya Main Road		1	395.00	5.80	0.04	91.64		
							109.24	8013.60	875405.66
21	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	475.00	0.10	--	95.00		
							95.00	542.72	51558.40
							Total Construction Cost		4865657.074
22	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	1232.23	27.00	33270.00
	Waste = 104.18 X 141 X 8 / 100 = 1175.15								
23					Cost towards Preparation of DPR LS				48657.00
24					Cost towards PMC / Third Party Inspection LS				48657.00
								Sub Total	4996241.07
25					Miscellaneous and rounding off				3758.93
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For Rs. 50.00 lakh
Head of A/C P-3089
CER NO 103 **Dt:** 22.07.17

TA to CE (YNK)

18. Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP –18. ANJANADRI LAYOUT

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Anjanadri Layout	Cum							
	LHS								
	Cross Road 2		1	85.00	0.45	0.40	15.30		
	Cross Road 3		1	80.00	0.45	0.40	14.40		
	Cross Road 5		1	75.00	0.45	0.40	13.50		
	Amarjyothi Layout								
	1st G Cross		1	30.00	0.45	0.40	5.40		
	New Drain								
	Anjanadri Layout								
	LHS								
	Cross Road 1		1	50.00	0.60	0.50	15.00		
	Cross Road 2		1	85.00	0.60	0.50	25.50		
	Cross Road 3		1	80.00	0.60	0.50	24.00		
	Cross Road 4		1	75.00	0.60	0.50	22.50		
	Cross Road 5		1	75.00	0.60	0.50	22.50		
	RHS								
	Cross Road 1		1	50.00	0.60	0.50	15.00		
	Cross Road 2		1	50.00	0.60	0.50	15.00		
	Cross Road 3		1	45.00	0.60	0.50	13.50		
	Cross Road 4		1	40.00	0.60	0.50	12.00		
	Cross Road 5		1	40.00	0.60	0.50	12.00		
	Cross Road 6		1	125.00	0.60	0.50	37.50		
	Amarjyothi Layout								
	1st A Cross		1	30.00	0.60	0.50	9.00		
	1st B Cross		1	30.00	0.60	0.50	9.00		
	1st C Cross		1	30.00	0.60	0.50	9.00		
	1st D Cross		1	30.00	0.60	0.50	9.00		
	1st E Cross		1	40.00	0.60	0.50	12.00		
	1st F Cross		1	20.00	0.60	0.50	6.00		
	1st G Cross		1	30.00	0.60	0.50	9.00		
	1st H Cross		1	30.00	0.60	0.50	9.00		
							335.10	186.92	**62636.89**
2	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	Anjanadri Layout								
	LHS								
	Cross Road 1		1	50.00	1.35	--	67.50		
	Cross Road 2		1	85.00	1.35	--	114.75		
	Cross Road 3		1	80.00	1.35	--	108.00		
	Cross Road 4		1	75.00	1.35	--	101.25		
	Cross Road 5		1	75.00	1.35	--	101.25		
	RHS								
	Cross Road 1		1	50.00	1.35	--	67.50		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Cross Road 2		1	50.00	1.35	--	67.50		
	Cross Road 3		1	45.00	1.35	--	60.75		
	Cross Road 4		1	40.00	1.35	--	54.00		
	Cross Road 5		1	40.00	1.35	--	54.00		
	Cross Road 6		1	125.00	1.35	--	168.75		
	Amarjyothi Layout								
	1st A Cross		1	30.00	1.35	--	40.50		
	1st B Cross		1	30.00	1.35	--	40.50		
	1st C Cross		1	30.00	1.35	--	40.50		
	1st D Cross		1	30.00	1.35	--	40.50		
	1st E Cross		1	40.00	1.35	--	54.00		
	1st F Cross		1	20.00	1.35	--	27.00		
	1st G Cross		1	30.00	1.35	--	40.50		
	1st H Cross		1	30.00	1.35	--	40.50		
							1289.25	665.68	**858227.94**
3	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Anjanadri Layout								
	LHS								
	Cross Road 1		1	50.00	5.00	0.20	50.00		
	Cross Road 2		1	85.00	5.00	0.20	85.00		
	Cross Road 3		1	80.00	5.00	0.20	80.00		
	Cross Road 4		1	75.00	5.00	0.20	75.00		
	Cross Road 5		1	75.00	5.00	0.20	75.00		
	RHS								
	Cross Road 1		1	50.00	5.00	0.20	50.00		
	Cross Road 2		1	50.00	5.00	0.20	50.00		
	Cross Road 3		1	45.00	5.00	0.20	45.00		
	Cross Road 4		1	40.00	5.00	0.20	40.00		
	Cross Road 5		1	40.00	5.00	0.20	40.00		
	Cross Road 6		1	125.00	5.00	0.20	125.00		
	Amarjyothi Layout								
	1st A Cross		1	30.00	5.00	0.20	30.00		
	1st B Cross		1	30.00	5.00	0.20	30.00		
	1st C Cross		1	30.00	5.00	0.20	30.00		
	1st D Cross		1	30.00	5.00	0.20	30.00		
	1st E Cross		1	40.00	5.00	0.20	40.00		
	1st F Cross		1	20.00	5.00	0.20	20.00		
	1st G Cross		1	30.00	5.00	0.20	30.00		
	1st H Cross		1	30.00	5.00	0.20	30.00		
							955.00	148.76	**142065.80**
4	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Anjanadri Layout								
	LHS								
	Cross Road 1		1	50.00	5.00	0.23	57.50		
	Cross Road 2		1	85.00	5.00	0.23	97.75		
	Cross Road 3		1	80.00	5.00	0.23	92.00		
	Cross Road 4		1	75.00	5.00	0.23	86.25		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Cross Road 5		1	75.00	5.00	0.23	86.25		
	RHS								
	Cross Road 1		1	50.00	5.00	0.23	57.50		
	Cross Road 2		1	50.00	5.00	0.23	57.50		
	Cross Road 3		1	45.00	5.00	0.23	51.75		
	Cross Road 4		1	40.00	5.00	0.23	46.00		
	Cross Road 5		1	40.00	5.00	0.23	46.00		
	Cross Road 6		1	125.00	5.00	0.23	143.75		
	Amarjyothi Layout								
	1st A Cross		1	30.00	5.00	0.23	34.50		
	1st B Cross		1	30.00	5.00	0.23	34.50		
	1st C Cross		1	30.00	5.00	0.23	34.50		
	1st D Cross		1	30.00	5.00	0.23	34.50		
	1st E Cross		1	40.00	5.00	0.23	46.00		
	1st F Cross		1	20.00	5.00	0.23	23.00		
	1st G Cross		1	30.00	5.00	0.23	34.50		
	1st H Cross		1	30.00	5.00	0.23	34.50		
							1098.25	1768.08	**1941793.86**
	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Anjanadri Layout								
	LHS								
	Cross Road 1		1	50.00	5.00	--	250.00		
	Cross Road 2		1	85.00	5.00	--	425.00		
	Cross Road 3		1	80.00	5.00	--	400.00		
	Cross Road 4		1	75.00	5.00	--	375.00		
	Cross Road 5		1	75.00	5.00	--	375.00		
	RHS								
	Cross Road 1		1	50.00	5.00	--	250.00		
	Cross Road 2		1	50.00	5.00	--	250.00		
	Cross Road 3		1	45.00	5.00	--	225.00		
	Cross Road 4		1	40.00	5.00	--	200.00		
	Cross Road 5		1	40.00	5.00	--	200.00		
	Cross Road 6		1	125.00	5.00	--	625.00		
	Amarjyothi Layout								
	1st A Cross		1	30.00	5.00	--	150.00		
	1st B Cross		1	30.00	5.00	--	150.00		
	1st C Cross		1	30.00	5.00	--	150.00		
	1st D Cross		1	30.00	5.00	--	150.00		
	1st E Cross		1	40.00	5.00	--	200.00		
	1st F Cross		1	20.00	5.00	--	100.00		
	1st G Cross		1	30.00	5.00	--	150.00		
	1st H Cross		1	30.00	5.00	--	150.00		
							4775.00	29.68	**141722.00**
5	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	Anjanadri Layout								
	LHS								
	Cross Road 1		1	50.00	5.00	--	250.00		
	Cross Road 2		1	85.00	5.00	--	425.00		
	Cross Road 3		1	80.00	5.00	--	400.00		
	Cross Road 4		1	75.00	5.00	--	375.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Cross Road 5		1	75.00	5.00	--	375.00		
	RHS								
	Cross Road 1		1	50.00	5.00	--	250.00		
	Cross Road 2		1	50.00	5.00	--	250.00		
	Cross Road 3		1	45.00	5.00	--	225.00		
	Cross Road 4		1	40.00	5.00	--	200.00		
	Cross Road 5		1	40.00	5.00	--	200.00		
	Cross Road 6		1	125.00	5.00	--	625.00		
	Amarjyothi Layout								
	1st A Cross		1	30.00	5.00	--	150.00		
	1st B Cross		1	30.00	5.00	--	150.00		
	1st C Cross		1	30.00	5.00	--	150.00		
	1st D Cross		1	30.00	5.00	--	150.00		
	1st E Cross		1	40.00	5.00	--	200.00		
	1st F Cross		1	20.00	5.00	--	100.00		
	1st G Cross		1	30.00	5.00	--	150.00		
	1st H Cross		1	30.00	5.00	--	150.00		
							4775.00	12.72	**60738.00**
6	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	Anjanadri Layout								
	LHS								
	Cross Road 1		1	50.00	5.00	0.04	10.00		
	Cross Road 2		1	85.00	5.00	0.04	17.00		
	Cross Road 3		1	80.00	5.00	0.04	16.00		
	Cross Road 4		1	75.00	5.00	0.04	15.00		
	Cross Road 5		1	75.00	5.00	0.04	15.00		
	RHS								
	Cross Road 1		1	50.00	5.00	0.04	10.00		
	Cross Road 2		1	50.00	5.00	0.04	10.00		
	Cross Road 3		1	45.00	5.00	0.04	9.00		
	Cross Road 4		1	40.00	5.00	0.04	8.00		
	Cross Road 5		1	40.00	5.00	0.04	8.00		
	Cross Road 6		1	125.00	5.00	0.04	25.00		
	Amarjyothi Layout								
	1st A Cross		1	30.00	5.00	0.04	6.00		
	1st B Cross		1	30.00	5.00	0.04	6.00		
	1st C Cross		1	30.00	5.00	0.04	6.00		
	1st D Cross		1	30.00	5.00	0.04	6.00		
	1st E Cross		1	40.00	5.00	0.04	8.00		
	1st F Cross		1	20.00	5.00	0.04	4.00		
	1st G Cross		1	30.00	5.00	0.04	6.00		
	1st H Cross		1	30.00	5.00	0.04	6.00		
							191.00	8013.60	**1530597.60**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
7	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Centre line	Sqm	2	955.00	0.10	–	191.00		
							191.00	542.72	103659.52
							Total Construction Cost		4841441.610
8	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		–	–	–	–	2154.48	27.00	58171.00
	Waste = 191 X 141 X 8 / 100 = 2154.48								
9							Cost towards Preparation of DPR LS		48415.00
10							Cost towards PMC / Third Party Inspection LS		48415.00
								Sub Total	4996442.61
11							Miscellaneous and rounding off		3557.39
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

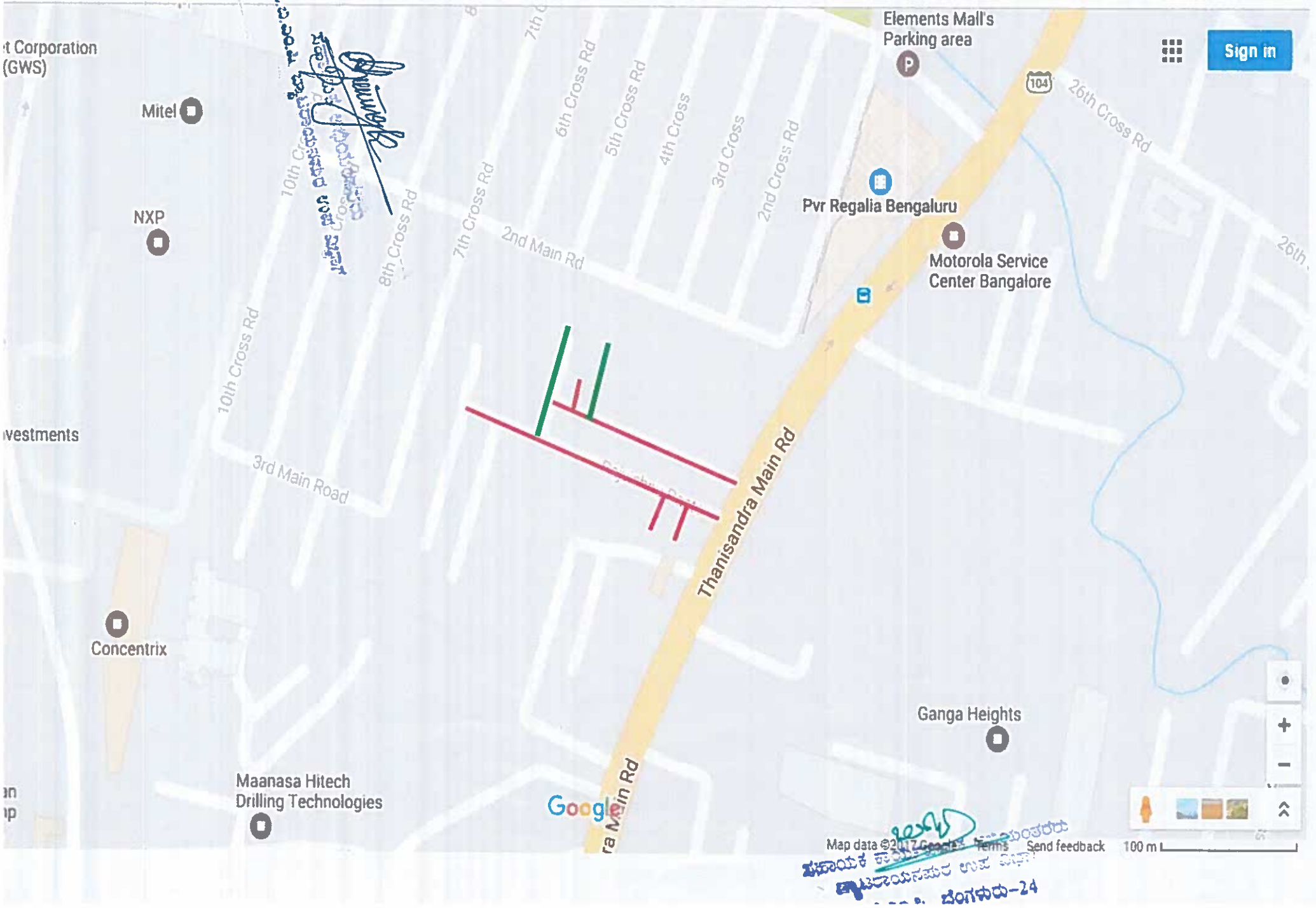
Executive Engineer

Technical Sanction
Accorded For Rs. 50.00 lakh only
Head of A/C P-3089
CER NO :104 Dt:22.07.17

TA CE (YNK)

19. Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP – 19. NAGAVARA VILLAGE, CHANUKYA LAYOUT, MANJUNATH NAGAR



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	Removing and refixing stone slabs of drains and pointing in CM (1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	Manjunath Nagar	Sqm							
	5th Cross		2	205.00	1.35		553.50		
	6th Cross		2	150.00	1.35		405.00		
	Consider 30% for Damaged Slabs						-287.55		
							670.95	80.56	**54051.73**
2	Removing and resetting of footpath slab (P.No.265, I.No.37.56 of PW, P&IWTD SR 2016-17)								
	Manjunath Nagar	Sqm							
	Culvert Slabs		6	6.00	1.80		64.80		
							64.80	132.50	**8586.00**
3	KSRRB M200-15.2. Dismantling of existing structures like culverts, Bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceble material and stacking the serviceble material with all lifts complete as per specifications. iii) Dismantling Stone Masonry B. Rubble Stone maonry in cement mortar (P.No.138, I.No.18.27 of PW,P&IWTD SR 2016-17)								
	Damaged Walls	Cum							
	Culverts		12	6.00	0.60	0.90	38.88		
							38.88	258.64	**10055.92**
4	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Manjunath Nagar								
	5th Cross		2	205.00	0.50	0.50	102.50		
	6th Cross		2	150.00	0.50	0.50	75.00		
	SR Residency PG Road		2	90.00	0.50	0.30	27.00		
	New Drain								
	1st Cross in 5th Cross		2	50.00	0.60	0.50	30.00		
	2nd Cross in 5th Cross		2	50.00	0.60	0.50	30.00		
	1st Cross in 6th Cross		2	80.00	0.60	0.50	48.00		
	3rd Cross in 6th Cross		1	50.00	0.60	0.50	15.00		
							327.50	186.92	**61216.30**
5	KSRRB M300- Construction of Embankment with Material Gravel/ Murrum. KSRRB M300-53. Construction of embankment with approved material Gravel/Murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement Table 300- 2 complete as per specifications.(Including cost of gravel / murrum, watering charges & compaction by vibratory roller to 95% of proctors density) MORTH Specification No. 305(P.No.142, I.No.19.60 of PW, P&IWTD SR 2016-17)								
	Manjunath Nagar	Cum							
	5th Cross		1	205.00	6.50	0.30	399.75		
	6th Cross		1	150.00	6.50	0.30	292.50		
							692.25	320.12	**221603.07**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
6	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For New BS Slab Drain	Sqm							
	Consider 30% for Damaged Slabs						287.55		
	1st Cross in 5th Cross		2	50.00	1.35	--	135.00		
	2nd Cross in 5th Cross		2	50.00	1.35	--	135.00		
	1st Cross in 6th Cross		2	80.00	1.35	--	216.00		
	3rd Cross in 6th Cross		1	50.00	0.90	--	45.00		
							818.55	665.68	544892.36
7	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13.(using available stones) (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	Damaged Culvert	Cum							
			8.00	6.00	0.60	0.90	25.92		
							25.92	2784.62	72177.35
8	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Cum							
			4.00	6.00	0.60	0.90	12.96		
							12.96	4438.22	57519.33
9	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Sqm							
	Culverts		12.00	6.00	--	0.90	64.80		
							64.80	102.82	6662.74
10	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	Coping	Cum							
	Culverts		12	6.00	0.60	0.10	4.32		
							4.32	5767.46	24915.43
11	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Culverts		4	6.00	1.80	--	43.20		
							43.20	5317.00	229694.40
12	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Road Portion	Cum							
	Manjunath Nagar								
	1st Cross in 6th Cross		1	80.00	4.60	0.20	73.60		
							73.60	148.76	**10948.74**
13	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	Manjunath Nagar								
	1st Cross in 5th Cross		1	50.00	4.50	0.15	33.75		
	2nd Cross in 5th Cross		1	50.00	3.50	0.15	26.25		
	2nd Cross in 6th Cross		1	30.00	3.00	0.15	13.50		
	3rd Cross in 6th Cross		1	50.00	4.20	0.15	31.50		
	Damaged Portion in SR Residency Road		2	10.00	4.50	0.15	13.50		
							118.50	5348.76	**633828.06**
14	Cement concrete pavement.Construction of un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base with OPC cement or any other type as per clause 1051.2.2 design mix M20/M30 , with 25mm and down size graded granite metal coarse aggregates and fine aggregtes , with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 , mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specifications. - M30 (at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum) ((P.No.177, I.No.22.6.1 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	1st Cross in 5th Cross		1	50.00	4.50	0.10	22.50		
	2nd Cross in 5th Cross		1	50.00	3.50	0.10	17.50		
	2nd Cross in 6th Cross		1	30.00	3.00	0.10	9.00		
	3rd Cross in 6th Cross		1	50.00	4.20	0.10	21.00		
	SR Residency PG Road		1	90.00	5.00	0.10	45.00		
							115.00	6217.96	**715065.40**
15	Vaccum de-watering with vaccum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift.(P.No.177, I.No.22.7 of PW, P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	1st Cross in 5th Cross		1	50.00	4.50	--	225.00		
	2nd Cross in 5th Cross		1	50.00	3.50	--	175.00		
	2nd Cross in 6th Cross		1	30.00	3.00	--	90.00		
	3rd Cross in 6th Cross		1	50.00	4.20	--	210.00		
	SR Residency PG Road		1	90.00	5.00	--	450.00		
							1150.00	95.40	**109710.00**
16	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road portion	Cum							

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	5th Cross		1	205.00	6.50	0.23	306.48		
	6th Cross		1	150.00	6.50	0.23	224.25		
	1st Cross in 6th Cross		1	80.00	4.60	0.23	84.64		
							615.37	1768.08	**1088014.55**
	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road portion	Sqm							
	5th Cross		1	205.00	6.50	--	1332.50		
	6th Cross		1	150.00	6.50	--	975.00		
	1st Cross in 6th Cross		1	80.00	4.60	--	368.00		
							2675.50	29.68	**79408.84**
17	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	5th Cross		1	205.00	6.50	--	1332.50		
	6th Cross		1	150.00	6.50	--	975.00		
	1st Cross in 6th Cross		1	80.00	4.60	--	368.00		
							2675.50	12.72	**34032.36**
18	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	5th Cross		1	205.00	6.50	0.04	53.30		
	6th Cross		1	150.00	6.50	0.04	39.00		
	1st Cross in 6th Cross		1	80.00	4.60	0.04	14.72		
							107.02	8013.60	**857615.47**
19	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge Line	Sqm	2	435.00	0.10	--	87.00		
							87.00	542.72	**47216.64**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
							Total Construction Cost		4867214.692
20	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	1207.19	27.00	32594.00
	Waste = 107.02 X 141 X 8 / 100 = 1207.19								
21							Cost towards Preparation of DPR LS		48673.00
22							Cost towards PMC / Third Party inspection LS		48673.00
								Sub Total	4997154.69
23							Miscellaneous and rounding off		2845.31
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

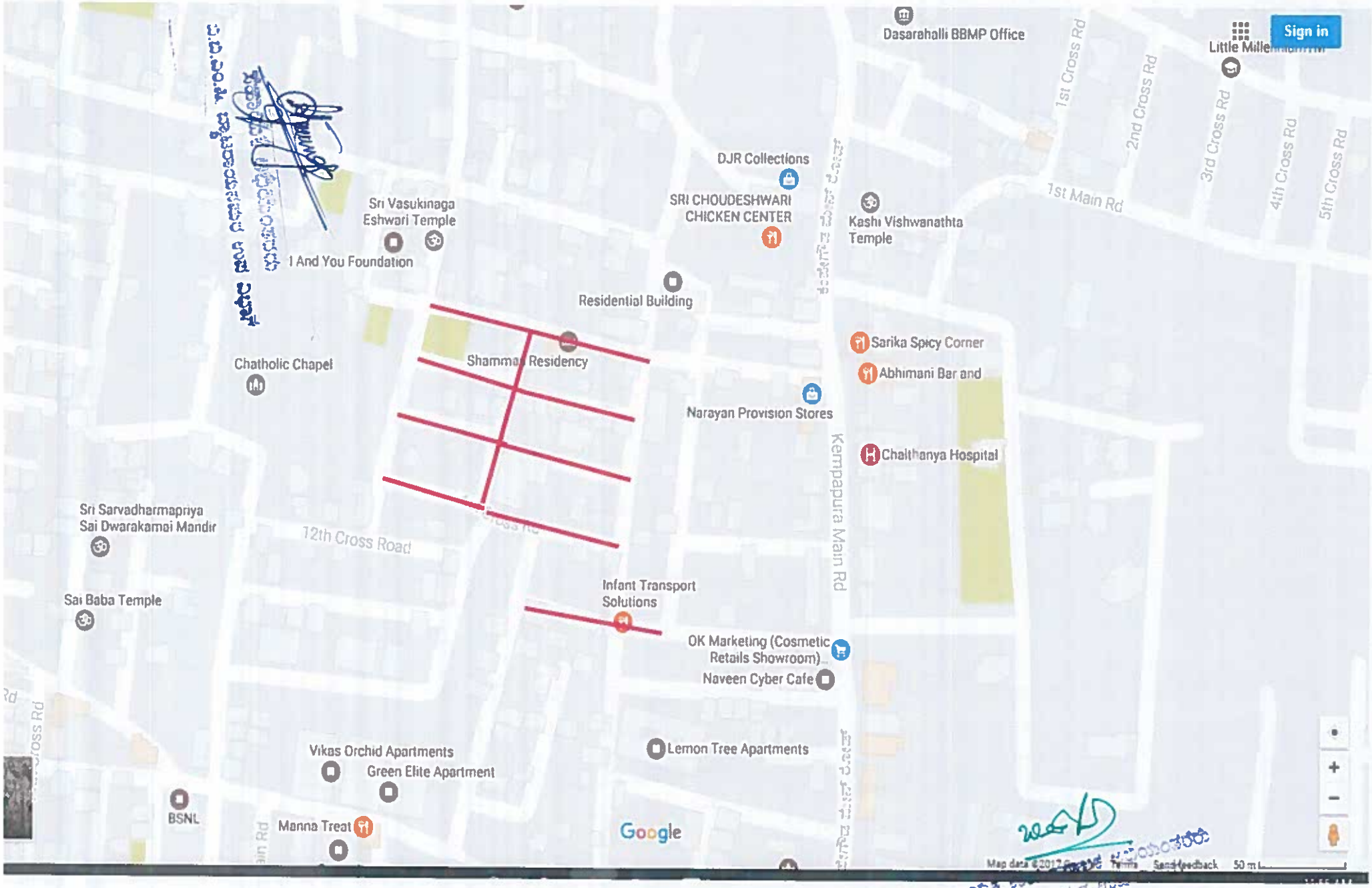
Technical Sanction
Accorded For Rs. 50.00 lakhs Only
Head of A/C. P-3089
CER NO :.105 Dt:.22.07.17

TA GE (YNK)

20. Improvements to Balance Roads, and Drains at Dasarahalli Village, Dasarahalli Colony, Mariyyanapalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP –20. DASARAHALLI VILLAGE, DASARAHALLI COLONY

KEY MAP –20. DASARAHALLI VILLAGE, DASARAHALLI COLONY



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Balance Roads, and Drains at Dasarahalli Village, Dasarahalli Colony, Mariyyanapalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M200-15.2. Dismantling of existing structures like culverts, Bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceble material and stacking the serviceble material with all lifts complete as per specifications. iii) Dismantling Stone Masonry B. Rubble Stone maonry in cement mortar (P.No.138, I.No.18.27 of PW,P&IWTD SR 2016-17)								
	Damaged Walls	Cum							
	L Shape Road		4	50.00	0.45	0.23	20.70		
							20.70	258.64	**5353.85**
2	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Dasarahalli Colony								
	Dasarahalli Colony Main Road		2	220.00	0.60	0.30	79.20		
	L Shape Road		2	150.00	0.60	0.30	54.00		
	Mariyanna Palya								
	1st A Cross		2	60.00	0.45	0.20	10.80		
	1syt C Cross		2	60.00	0.45	0.20	10.80		
	2nd A Cross		1	65.00	0.45	0.20	5.85		
	2nd B Cross		1	70.00	0.45	0.20	6.30		
	2nd C Cross		1	75.00	0.45	0.20	6.75		
	New Drain								
	Mariyanna Palya								
	C Main Road		2	95.00	0.50	0.45	42.75		
	1st B Cross		2	60.00	0.50	0.45	27.00		
	1st D Cross		2	60.00	0.50	0.45	27.00		
	2nd A Cross		1	65.00	0.50	0.45	14.63		
	2nd B Cross		1	70.00	0.50	0.45	15.75		
	2nd C Cross		1	75.00	0.50	0.45	16.88		
	2nd D Cross		2	85.00	0.50	0.45	38.25		
	Culverts								
			12	6.50	2.00	1.05	163.80		
							519.75	186.92	**97151.67**
3	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13.(using available stones) (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	Damaged Culvert	Cum							
	L Shape Road		4.00	40.00	0.45	0.23	16.56		
							16.56	2784.62	**46113.31**
4	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	SSM Wall	Cum							
	L Shape Road		4.00	10.00	0.45	0.23	4.14		
	Raising/Flagging of SSM Drain		4	150.00	0.45	0.23	62.10		
	Culverts								
			24	6.50	0.60	0.90	84.24		
							150.48	4438.22	667863.35
5	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Sqm							
	L Shape Road		4.00	50.00	--	0.23	46.00		
	Raising/Flagging of SSM Drain		4.00	150.00	--	0.23	138.00		
	Culverts								
			24.00	6.50	--	0.90	140.40		
							324.40	102.82	33354.81
6	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	Coping	Cum							
	L Shape Road		4	150.00	0.45	0.08	20.25		
	Culverts								
			24	6.50	0.60	0.10	9.36		
							29.61	5767.46	170774.49
7	Providing and fixing RCC Precast cover slab of 100mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Dasarahalli Colony Main Road		2	220.00	0.90	--	396.00		
	L Shape Road		2	150.00	1.50	--	450.00		
							846.00	1817.00	1537182.00
8	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Culverts		12	6.50	1.80	--	140.40		
							140.40	5317.00	746506.80
9	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)								
	For BS Slab Drain	Sqm							
	Mariyanna Palya								
	C Main Road		2.00	95.00	1.35	--	256.50		
	1st B Cross		2.00	60.00	1.35	--	162.00		
	1st D Cross		2.00	60.00	1.35	--	162.00		
	2nd A Cross		1.00	65.00	1.35	--	87.75		
	2nd B Cross		1.00	70.00	1.35	--	94.50		
	2nd C Cross		1.00	75.00	1.35	--	101.25		
	2nd D Cross		2.00	85.00	1.35	--	229.50		
							1093.50	665.68	727921.08

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
10	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	Culverts		12	6.50	2.00	0.15	23.40		
	Cross Road 1		1	140.00	3.50	0.15	73.50		
							96.90	5348.76	518294.84
11	Cement concrete pavement.Construction of un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base with OPC cement or any other type as per clause 1051.2.2 design mix M20/M30 , with 25mm and down size graded granite metal coarse aggregates and fine aggregtes , with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 , mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specifications. - M30 (at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum) ((P.No.177, I.No.22.6.1 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	Cross Road 1		1	140.00	3.50	0.10	49.00		
							49.00	6217.96	304680.04
12	Vaccum de-watering with vaccum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift.(P.No.177, I.No.22.7 of PW, P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Cross Road 1		1	140.00	3.50	--	490.00		
							490.00	95.40	46746.00
							Total Construction Cost		4901942.240
13						Cost towards Preparation of DPR LS			49020.00
14						Cost towards PMC / Third Party Inspection LS			49020.00
								Sub Total	4999982.24
15							Miscellaneous and rounding off		17.76
								Total	5000000.00

Certificate

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Assistant Executive Engineer
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬೆಂಗಳೂರು-24

Executive Engineer
ಬ್ಯಾಟರಾಯನಪುರ ವಿಭಾಗ
ಬೆಂಗಳೂರು-560026

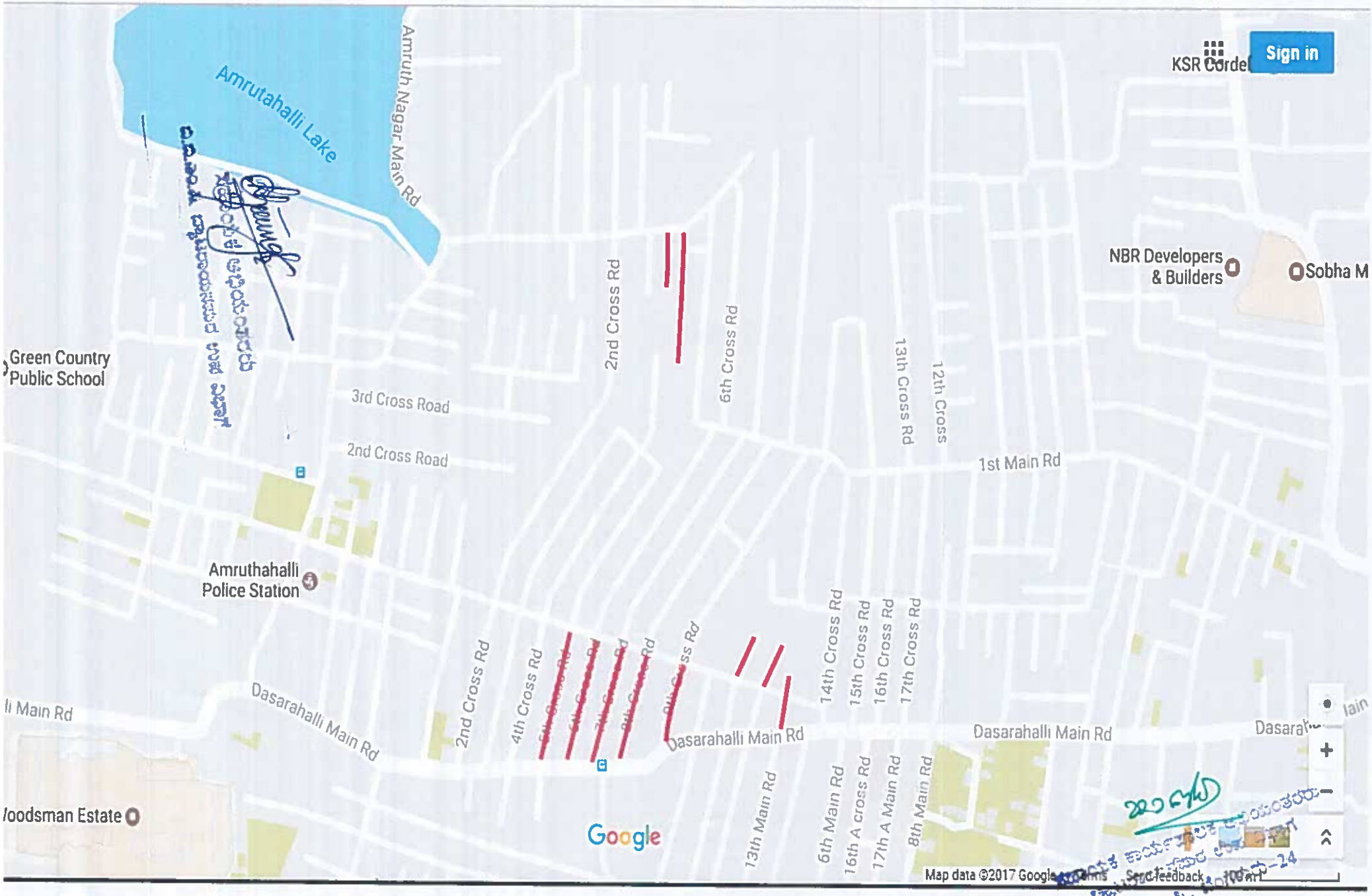
Technical Sanction
Accorded For Rs. 50.00 lakh
Head of A/C P-3089
CER NO :126 Dt:22.07.17

TA ICE (MIK)

Tejus Consultants

21. Improvements to Balance Roads, and Drains at Bhuvaneshwarinagara, Maruthi Layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP –21. BHUVANESHWARA NAGARA, MARUTHI LAYOUT



BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Balance Roads, and Drains at Bhuvaneshwarinagara, Maruthi Layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Maruthi Nagar								
	2nd Main		2	115.00	0.45	0.30	31.05		
	2nd A Cross		2	45.00	0.45	0.30	12.15		
	2nd B Cross		2	45.00	0.45	0.30	12.15		
	2nd C Cross		2	50.00	0.45	0.30	13.50		
	Bhuvaneshwarinagara								
	13th Cross		2	40.00	0.45	0.30	10.80		
	Cross Road 1		2	30.00	0.45	0.30	8.10		
	Cross Road 2		2	60.00	0.45	0.30	16.20		
	Cross Road 3		2	60.00	0.45	0.30	16.20		
	5th Cross		2	150.00	0.45	0.30	40.50		
	6th Cross		2	140.00	0.45	0.30	37.80		
	7th Cross		2	130.00	0.45	0.30	35.10		
	8th Cross		2	125.00	0.45	0.30	33.75		
	9th Cross		2	80.00	0.45	0.30	21.60		
	1st Cross Sonnappa Layout		2	225.00	0.45	0.30	60.75		
	Culverts		1	7.00	2.00	1.05	14.70		
			1	9.00	2.00	1.05	18.90		
							383.25	186.92	71637.09
2	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	Culverts		1	7.00	2.00	0.15	2.10		
			1	9.00	2.00	0.15	2.70		
							4.80	5348.76	25674.05
3	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Cum							
	Culverts		2	7.00	0.60	0.90	7.56		
			2	9.00	0.60	0.90	9.72		
							17.28	4438.22	76692.44
4	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Sqm							
	Culverts		2	7.00	–	0.90	12.60		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
			2	9.00	--	0.90	16.20		
							28.80	102.82	**2961.22**
5	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	Coping	Cum							
	Culverts		2	7.00	0.600	0.100	0.84		
			2	9.00	0.600	0.100	1.08		
							1.92	5767.46	**11073.52**
6	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Culverts		1	7.00	1.80	--	12.60		
			1	9.00	1.80	--	16.20		
							28.80	5317.00	**153129.60**
7	KSRRB M300-52.2. Scarifying Existing Bituminous surface to a depth of 50mm by Mechanical Means. Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material and complete as per specifications. MORTH Specification No. 305.4.3 (P.No.148, I.No.19.59 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Maruthi Nagar								
	2nd Main		1	115.00	5.50		632.50		
	2nd A Cross		1	45.00	5.50		247.50		
	2nd B Cross		1	45.00	5.50		247.50		
	2nd C Cross		1	50.00	5.50		275.00		
	Bhuvaneshwarinagara								
	13th Cross		1	40.00	5.00		200.00		
	Cross Road 2		1	60.00	5.00		300.00		
	Cross Road 3		1	60.00	5.00		300.00		
	1st Cross Sonnappa Layout		1	225.00	5.00		1125.00		
							3327.50	7.71	**25655.03**
8	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Bhuvaneshwarinagara								
	Cross Road 1		1	30.00	5.00	0.25	37.50		
	9th Cross		1	80.00	1.20	0.25	24.00		
	Bad Reaches		6	1.20	1.50	0.25	2.70		
			8	0.80	0.60	0.25	0.96		
							65.16	148.76	**9693.20**
9	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Road Portion	Cum							
	Maruthi Nagar								
	2nd Main		1	115.00	5.50	0.23	145.48		
	2nd A Cross		1	45.00	5.50	0.23	56.93		
	2nd B Cross		1	45.00	5.50	0.23	56.93		
	2nd C Cross		1	50.00	5.50	0.23	63.25		
	Bhuvaneshwarinagara								
	13th Cross		1	40.00	5.00	0.23	46.00		
	Cross Road 2		1	60.00	5.00	0.23	69.00		
	Cross Road 3		1	60.00	5.00	0.23	69.00		
	9th Cross		1	80.00	1.20	0.23	22.08		
	Cross Road 1		1	30.00	5.00	0.23	34.50		
	1st Cross Sonnappa Layout		1	225.00	5.00	0.23	258.75		
	SLS Apartment Road		1	95.00	7.00	0.23	152.95		
	Bad Reaches		6	1.20	1.50	0.23	2.48		
			8	0.80	0.60	0.23	0.88		
							978.22	1768.08	1729575.11
10	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Maruthi Nagar								
	2nd Main		1	115.00	5.50	--	632.50		
	2nd A Cross		1	45.00	5.50	--	247.50		
	2nd B Cross		1	45.00	5.50	--	247.50		
	2nd C Cross		1	50.00	5.50	--	275.00		
	Bhuvaneshwarinagara								
	13th Cross		1	40.00	5.00	--	200.00		
	Cross Road 2		1	60.00	5.00	--	300.00		
	Cross Road 3		1	60.00	5.00	--	300.00		
	9th Cross		1	80.00	1.20	--	96.00		
	Cross Road 1		1	30.00	5.00	--	150.00		
	1st Cross Sonnappa Layout		1	225.00	5.00	--	1125.00		
	SLS Apartment Road		1	95.00	7.00	--	665.00		
	Bad Reaches		6	1.20	1.50	--	10.80		
			8	0.80	0.60	--	3.84		
							4253.14	29.68	126233.20
11	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Maruthi Nagar								
	2nd Main		1	115.00	5.50	--	632.50		
	2nd A Cross		1	45.00	5.50	--	247.50		
	2nd B Cross		1	45.00	5.50	--	247.50		
	2nd C Cross		1	50.00	5.50	--	275.00		
	Bhuvaneshwarinagara								
	13th Cross		1	40.00	5.00	--	200.00		
	Cross Road 2		1	60.00	5.00	--	300.00		
	Cross Road 3		1	60.00	5.00	--	300.00		
	5th Cross		1	150.00	5.00	--	750.00		
	6th Cross		1	140.00	5.00	--	700.00		
	7th Cross		1	130.00	5.00	--	650.00		
	8th Cross		1	125.00	5.00	--	625.00		
	9th Cross		1	80.00	5.00	--	400.00		
	Cross Road 1		1	30.00	5.00	--	150.00		
	1st Cross Sonnappa Layout		1	225.00	5.00	--	1125.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	SLS Apartment Road		1	95.00	7.00	--	665.00		
							7267.50		
	Deduct prime coat						-4253.14		
							3014.36	3.18	**9585.66**
12	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	Maruthi Nagar								
	2nd Main		1	115.00	5.50	--	632.50		
	2nd A Cross		1	45.00	5.50	--	247.50		
	2nd B Cross		1	45.00	5.50	--	247.50		
	2nd C Cross		1	50.00	5.50	--	275.00		
	Bhuvaneshwarinagara								
	13th Cross		1	40.00	5.00	--	200.00		
	Cross Road 2		1	60.00	5.00	--	300.00		
	Cross Road 3		1	60.00	5.00	--	300.00		
	5th Cross		1	150.00	5.00	--	750.00		
	6th Cross		1	140.00	5.00	--	700.00		
	7th Cross		1	130.00	5.00	--	650.00		
	8th Cross		1	125.00	5.00	--	625.00		
	9th Cross		1	80.00	5.00	--	400.00		
	Cross Road 1		1	30.00	5.00	--	150.00		
	1st Cross Sonnappa Layout		1	225.00	5.00	--	1125.00		
	SLS Apartment Road		1	95.00	7.00	--	665.00		
							7267.50	12.72	**92442.60**
13	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	Maruthi Nagar								
	2nd Main		1	115.00	5.50	0.04	25.30		
	2nd A Cross		1	45.00	5.50	0.04	9.90		
	2nd B Cross		1	45.00	5.50	0.04	9.90		
	2nd C Cross		1	50.00	5.50	0.04	11.00		
	Bhuvaneshwarinagara								
	13th Cross		1	40.00	5.00	0.04	8.00		
	Cross Road 2		1	60.00	5.00	0.04	12.00		
	Cross Road 3		1	60.00	5.00	0.04	12.00		
	5th Cross		1	150.00	5.00	0.04	30.00		
	6th Cross		1	140.00	5.00	0.04	28.00		
	7th Cross		1	130.00	5.00	0.04	26.00		
	8th Cross		1	125.00	5.00	0.04	25.00		
	9th Cross		1	80.00	5.00	0.04	16.00		
	Cross Road 1		1	30.00	5.00	0.04	6.00		
	1st Cross Sonnappa Layout		1	225.00	5.00	0.04	45.00		
	SLS Apartment Road		1	95.00	7.00	0.04	26.60		
							290.70	8013.60	**2329553.52**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
14	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	1390.00	0.10	--	278.00		
							278.00	542.72	150876.16
							Total Construction Cost		4814782.405
15	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	3279.10	27.00	88536.00
	Waste = 290.70 X 141 X 8 / 100 = 3279.10								
16					Cost towards Preparation of DPR LS				48148.00
17					Cost towards PMC / Third Party inspection LS				48148.00
								Sub Total	4999314.40
18							Miscellaneous and rounding off		385.60
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The work/ not was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For Rs. Fifty lakh only
Head of A/C P-2089
CER NO :107 Dt:. 22.07.17

TA SE (YNK).

22. Improvements to Balance Roads, and Drains at MS Ramaiah North City, Rasool Sab Layout, Anam Enclave and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP – 22. M S RAMAIH NORTH CITY, RASOOL SAB LAYOUT, ANAM ENCLAVE

ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Balance Roads, and Drains at MS Ramaiah North City, Rasool Sab Layout, Anam Enclave and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	MS Ramaiah North City								
	4th A Cross		2	35.00	0.45	0.25	7.88		
	5th A Cross		2	35.00	0.45	0.25	7.88		
	6th Cross		2	195.00	0.45	0.25	43.88		
	6th A Cross		2	45.00	0.45	0.30	12.15		
	7th Cross		2	200.00	0.45	0.30	54.00		
	8th Cross		2	195.00	0.45	0.30	52.65		
	8th A Cross		2	90.00	0.45	0.30	24.30		
	9th Cross		2	195.00	0.45	0.30	52.65		
	9th A Cross		2	70.00	0.45	0.30	18.90		
	10th Cross		1	210.00	0.45	0.30	28.35		
	10th A Cross		1	55.00	0.45	0.30	7.43		
	Cross Road 1		2	120.00	0.45	0.30	32.40		
							342.45	186.92	**64010.75**
2	KSRRB M300-52.2. Scarifying Existing Bituminous surface to a depth of 50mm by Mechanical Means. Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material and complete as per specifications. MORTH Specification No. 305.4.3 (P.No.148, I.No.19.59 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	MS Ramaiah North City								
	4th A Cross		1	35.00	5.00		175.00		
	5th A Cross		1	35.00	5.00		175.00		
	6th Cross		1	195.00	5.00		975.00		
	6th A Cross		1	45.00	5.00		225.00		
	7th Cross		1	200.00	5.00		1000.00		
	8th Cross		1	195.00	5.00		975.00		
	8th A Cross		1	90.00	5.00		450.00		
	9th Cross		1	195.00	5.00		975.00		
	9th A Cross		1	70.00	5.00		350.00		
	10th Cross		1	210.00	5.00		1050.00		
	10th A Cross		1	55.00	5.00		275.00		
	Cross Road 1		1	120.00	5.00		600.00		
							7225.00	7.71	**55704.75**
3	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road portion	Cum							
	MS Ramaiah North City								
	4th A Cross		1	35.00	5.00	0.15	26.25		
	5th A Cross		1	35.00	5.00	0.15	26.25		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	6th Cross		1	195.00	5.00	0.15	146.25		
	6th A Cross		1	45.00	5.00	0.15	33.75		
	7th Cross		1	200.00	5.00	0.15	150.00		
	8th Cross		1	195.00	5.00	0.15	146.25		
	8th A Cross		1	90.00	5.00	0.15	67.50		
	9th Cross		1	195.00	5.00	0.15	146.25		
	9th A Cross		1	70.00	5.00	0.15	52.50		
	10th Cross		1	210.00	5.00	0.15	157.50		
	10th A Cross		1	55.00	5.00	0.15	41.25		
	Cross Road 1		1	120.00	5.00	0.15	90.00		
							1083.75	1768.08	**1916156.70**
4	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road portion	Sqm							
	MS Ramaiah North City								
	4th A Cross		1	35.00	5.00	--	175.00		
	5th A Cross		1	35.00	5.00	--	175.00		
	6th Cross		1	195.00	5.00	--	975.00		
	6th A Cross		1	45.00	5.00	--	225.00		
	7th Cross		1	200.00	5.00	--	1000.00		
	8th Cross		1	195.00	5.00	--	975.00		
	8th A Cross		1	90.00	5.00	--	450.00		
	9th Cross		1	195.00	5.00	--	975.00		
	9th A Cross		1	70.00	5.00	--	350.00		
	10th Cross		1	210.00	5.00	--	1050.00		
	10th A Cross		1	55.00	5.00	--	275.00		
	Cross Road 1		1	120.00	5.00	--	600.00		
							7225.00	29.68	**214438.00**
5	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	MS Ramaiah North City								
	4th A Cross		1	35.00	5.00	--	175.00		
	5th A Cross		1	35.00	5.00	--	175.00		
	6th Cross		1	195.00	5.00	--	975.00		
	6th A Cross		1	45.00	5.00	--	225.00		
	7th Cross		1	200.00	5.00	--	1000.00		
	8th Cross		1	195.00	5.00	--	975.00		
	8th A Cross		1	90.00	5.00	--	450.00		
	9th Cross		1	195.00	5.00	--	975.00		
	9th A Cross		1	70.00	5.00	--	350.00		
	10th Cross		1	210.00	5.00	--	1050.00		
	10th A Cross		1	55.00	5.00	--	275.00		
	Cross Road 1		1	120.00	5.00	--	600.00		
							7225.00	12.72	**91902.00**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
6	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	MS Ramaiah North City								
	4th A Cross		1	35.00	5.00	0.04	7.00		
	5th A Cross		1	35.00	5.00	0.04	7.00		
	6th Cross		1	195.00	5.00	0.04	39.00		
	6th A Cross		1	45.00	5.00	0.04	9.00		
	7th Cross		1	200.00	5.00	0.04	40.00		
	8th Cross		1	195.00	5.00	0.04	39.00		
	8th A Cross		1	90.00	5.00	0.04	18.00		
	9th Cross		1	195.00	5.00	0.04	39.00		
	9th A Cross		1	70.00	5.00	0.04	14.00		
	10th Cross		1	210.00	5.00	0.04	42.00		
	10th A Cross		1	55.00	5.00	0.04	11.00		
	Cross Road 1		1	120.00	5.00	0.04	24.00		
							289.00	8013.60	2315930.40
7	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	1445.00	0.10	--	289.00		
							289.00	542.72	156846.08
							Total Construction Cost		4814988.680
8	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	3259.92	27.00	88018.00
	Waste = 289 X 141 X 8 / 100 = 3259.92								
9							Cost towards Preparation of DPR LS		48150.00
10							Cost towards PMC / Third Party inspection LS		48150.00
								Sub Total	4999306.68
11							Miscellaneous and rounding off		693.32
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.

2 The provisions made in the estimate are necessary and essential.

3 The workspot was inspected and work is found to be necessary.

4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For Rs: 50.00 lakh
Head of A/C P-3089
CER NO :108 Dt. 22.07.17

SE (YNK)

23. Improvements to Balance Roads, and Drains at Vidya Sagar Layout, Doorvani Nagar, Gundu Rao Layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

KEY MAP –23. VIDYASAGARA LAYOUT (SADIQ LAYOUT)

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Balance Roads, and Drains at Vidya Sagar Layout, Doorvani Nagar, Gundu Roa Layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

Est Cost: =50.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Desilt	Cum							
	Sawmill Road		2	850.00	0.45	0.20	153.00		
	Masjid Road		2	170.00	0.45	0.20	30.60		
	Cross Road 1		2	25.00	0.45	0.20	4.50		
	Cross Road 2		2	35.00	0.45	0.20	6.30		
	Cross Road 3		2	25.00	0.45	0.20	4.50		
	Cross Road 4		2	25.00	0.45	0.20	4.50		
	Culverts		15	6.40	2.00	1.05	201.60		
							405.00	186.92	75702.60
2	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	Culverts		15	6.40	2.00	0.15	28.80		
							28.80	5348.76	154044.29
3	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Cum							
	Culverts		30	6.40	0.60	0.90	103.68		
							103.68	4438.22	460154.65
4	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.113, I.No.15.1 of PW, P&IWTD S.R 2016-17)								
	SSM Wall	Sqm							
	Culverts		30	6.40	--	0.90	172.80		
							172.80	102.82	17767.30
5	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2016-17)								
	Coping	Cum							
	Culverts		30	6.40	0.60	0.10	11.52		
							11.52	5767.46	66441.14

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
6	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Cover Slab	Sqm							
	Culverts		15	6.40	1.80	--	172.80		
							172.80	5317.00	**918777.60**
7	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	Sawmill Road		1	250.00	5.50	0.25	343.75		
	Masjid Road		1	170.00	4.30	0.25	182.75		
	Cross Road 1		1	25.00	4.00	0.25	25.00		
	Cross Road 2		1	35.00	4.00	0.25	35.00		
	Cross Road 3		1	25.00	4.00	0.25	25.00		
	Cross Road 4		1	25.00	4.00	0.25	25.00		
							636.50	148.76	**94685.74**
8	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)								
	Road portion	Cum							
	Sawmill Road		1	250.00	5.50	0.23	316.25		
	Masjid Road		1	170.00	4.30	0.23	168.13		
	Cross Road 1		1	25.00	4.00	0.23	23.00		
	Cross Road 2		1	35.00	4.00	0.23	32.20		
	Cross Road 3		1	25.00	4.00	0.23	23.00		
	Cross Road 4		1	25.00	4.00	0.23	23.00		
							585.58	1768.08	**1035352.29**
9	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road portion	Sqm							
	Sawmill Road		1	250.00	5.50	--	1375.00		
	Masjid Road		1	170.00	4.30	--	731.00		
	Cross Road 1		1	25.00	4.00	--	100.00		
	Cross Road 2		1	35.00	4.00	--	140.00		
	Cross Road 3		1	25.00	4.00	--	100.00		
	Cross Road 4		1	25.00	4.00	--	100.00		
							2546.00	29.68	**75565.28**
10	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Sawmill Road		1	850.00	5.00	--	4250.00		
	Masjid Road		1	170.00	4.30	--	731.00		
	Cross Road 1		1	25.00	4.00	--	100.00		
	Cross Road 2		1	35.00	4.00	--	140.00		
	Cross Road 3		1	25.00	4.00	--	100.00		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Cross Road 4		1	25.00	4.00	--	100.00		
							5421.00		
	Deduct prime coat						-2546.00		
							2875.00	3.18	**9142.50**
11	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying BC	Sqm							
	Road Portion								
	Sawmill Road		1	850.00	5.00	--	4250.00		
	Masjid Road		1	170.00	4.30	--	731.00		
	Cross Road 1		1	25.00	4.00	--	100.00		
	Cross Road 2		1	35.00	4.00	--	140.00		
	Cross Road 3		1	25.00	4.00	--	100.00		
	Cross Road 4		1	25.00	4.00	--	100.00		
							5421.00	12.72	**68955.12**
12	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	Road Portion								
	Sawmill Road		1	850.00	5.00	0.04	170.00		
	Masjid Road		1	170.00	4.30	0.04	29.24		
	Cross Road 1		1	25.00	4.00	0.04	4.00		
	Cross Road 2		1	35.00	4.00	0.04	5.60		
	Cross Road 3		1	25.00	4.00	0.04	4.00		
	Cross Road 4		1	25.00	4.00	0.04	4.00		
							216.84	8013.60	**1737669.02**
13	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Edge line	Sqm	2	1130.00	0.10	--	226.00		
							226.00	542.72	**122654.72**
							Total Construction Cost		**4836912.249**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
14	Add cost of Waste Plastic @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	2445.96	27.00	66041.00
	Waste = 216.84 X 141 X 8 / 100 = 2445.96								
15						Cost towards Preparation of DPR LS			48370.00
16						Cost towards PMC / Third Party inspection LS			48370.00
								Sub Total	4999693.25
17								Miscellaneous and rounding off	306.75
								Total	5000000.00

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Executive Engineer

Technical Sanction
Accorded For ....Rs. 50.00 lakh
Head of A/C..P-3089
CER NO :....109..... Dt:..22.07.17